



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/556,579	04/24/2000	Anders Eriksson	34645-00505USPT	7205
7590	10/30/2003		EXAMINER	
Raymond Van Dyke Jenkens & Gilchrist PC 3200 Fountain Place 1445 Ross Avenue Dallas, TX 75202-2799			LELE, TANMAY S	
			ART UNIT	PAPER NUMBER
			2684	7
			DATE MAILED: 10/30/2003	

Please find below and/or attached an Office communication concerning this application or proceeding.

d-R

Office Action Summary	Application No.	Applicant(s)
	09/556,579	ERIKSSON ET AL.
	Examiner Tanmay S Lele	Art Unit 2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 24 April 2000.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-33 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 24 April 2000 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 1 – 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "410" and "450" have both been used to designate "NS2." A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "500" in Figure 5. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 6 – 8, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ozawa (Ozawa, European Patent Application Number 655,731).

Regarding claim 1, Ozawa teaches of in a telecommunications system having voice communications subject to noise, a distributed noise suppression system for suppressing said noise for a given one of said voice communications (Figures 1 and 3 and page 7, lines 22 –27), said noise suppression system comprising: a first noise suppressor, within a first device, for suppressing noise received by said first device prior to transmission of the noise-suppressed signal to a destination device (Figure 1 and page 3, lines 36 –43 and page 7, lines 22 –27); and a second noise suppressor, within said destination device, for further suppressing the noise-suppressed signal received from said first device to said destination device, whereby the noise associated with said given one of said voice communications is reduced twice (Figure 3 and page 6, lines 33 – 40; and page 7, lines 22 –27).

Regarding claim 6, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa further teaches of comprising: an encoder, within said first device and attached to said first noise suppressor, for encoding said noise-suppressed signal from said first noise suppressor prior to transmission to said destination device (Figure 1 and page 3, lines 27 – 31).

Regarding claim 7, Ozawa teaches all the claimed limitations as recited in claim 6. Ozawa further teaches of comprising: a decoder, within said destination device and attached to said second noise suppressor, for decoding said noise-suppressed signal received from said transmitter prior to said second noise suppressor (Figure 3 and page 6, lines 33 – 40).

Regarding claim 8, Ozawa teaches all the claimed limitations as recited in claim 7. Ozawa further teaches of wherein said noise-suppressed signal received from said transmitter prior to said second suppressor is subject to signal distortion caused by low bit-rate speech

Art Unit: 2684

encoding by said encoder (page 3, lines 10 – 17), and wherein said second noise suppressor is tuned to suppress said signal distortion (page 6, lines 41 – 50).

Regarding claim 18, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa further teaches of wherein said first and second noise suppressors employ respective algorithms therein tuned to the respective noises encountered (Figures 2 and 4 and starting page 43, line 43 and ending page 6, line 33 and starting page 6, line 51 and ending page 7, line 15).

Regarding claim 19, Ozawa teaches all the claimed limitations as recited in claim 18. Ozawa further teaches of wherein the first and second noise suppression algorithms adapt dynamically to the respective noises encountered (Figures 2 and 4 and starting page 43, line 43 and ending page 6, line 33 and starting page 6, line 51 and ending page 7, line 15).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 4, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further in view of Romesburg (Romesburg, WIPO No. 97/34290).

Regarding claim 2, Ozawa teaches all the claimed limitations as recited in claim 1.

Ozawa does not specifically teach of wherein said first device is a mobile terminal.

In a related art dealing with noise suppression, Romesburg teaches of wherein said first device is a mobile terminal (Figure 3 and page 11, lines 15 – 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

Regarding claim 4, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa does not specifically teach of wherein said destination device is a mobile telephone.

In a related art dealing with noise suppression, Romesburg teaches of wherein said destination device is a mobile telephone (Figure 3 and page 11, lines 15 – 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

Regarding claim 15, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa does not specifically teach of wherein the noise associated with said given one of said voice communications is acoustic.

In a related art dealing with noise suppression, Romesburg teaches of wherein the noise associated with said given one of said voice communications is acoustic (Figure 3 and page 11, lines 15 – 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

8. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further

Art Unit: 2684

in view of Romesburg (Romesburg, WIPO No. 97/34290) and Voit (Voit, US Patent No. 6,075,783).

Regarding claim 3, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa does not specifically teach of wherein said first device is selected from the group consisting of: a microphone, terminal, PC, Internet device, and a transmission system.

In a related art dealing with noise suppression, Romesburg teaches of wherein said first device is selected from the group consisting of: a microphone, terminal, and a transmission system (Figure 3 and page 11, lines 15 – 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

Ozawa in view of Romesburg do not specifically teach of a PC and Internet device.

In a related art dealing with the use of mobile communications, Voit teaches of PC and Internet device (Figure 4).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Romesburg's noise suppression system, Voit's VOIP system, for the accommodating the use of communicating with a computer terminal via a wireless unit (and vice versa) as taught by Voit.

Regarding claim 5, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa does not specifically teach of wherein said first device is selected from the group consisting of: a microphone, terminal, PC, Internet device, and a transmission system.

In a related art dealing with noise suppression, Romesburg teaches of wherein said first device is selected from the group consisting of: a loudspeaker, terminal, and a transmission system (Figure 3 and page 11, lines 15 – 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

Ozawa in view of Romesburg do not specifically teach of a PC and Internet device.

In a related art dealing with the use of mobile communications, Voit teaches of PC and Internet device (Figure 4).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Romesburg's noise suppression system, Voit's VOIP system, for the accommodating the use of communicating with a computer terminal via a wireless unit (and vice versa) as taught by Voit.

9. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further in view of Aoki et al. (Aoki, US Patent No. 5,933,506).

Regarding claim 9, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa does not specifically teach of wherein the noise associated with said given one of said voice communications is reduced by said first suppressor by about 6 to 14 dB.

In a related art dealing with noise reduction, Aoki teaches of wherein the noise associated with said given one of said voice communications is reduced by said first suppressor by about 6 to 14 dB (starting column 7, line 66 and ending column 8, line 3).

Art Unit: 2684

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression's technique, Aoki's suppression limits, for the purposes of reducing added noise at a specified level, as taught by Aoki.

Regarding claim 10, Ozawa in view of Aoki teach all the claimed limitations as recited in claim 9. Aoki further teaches of wherein the noise is reduced by said first suppressor by about 8 to 10 dB (starting column 7, line 66 and ending column 8, line 3).

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and Aoki et al. (Aoki, US Patent No. 5,933,506) as applied to claim 10 above, and further in view of Foulkes et al (Foulkes, US Patent No. 3,560,669).

Regarding claim 11, Ozawa in view of Aoki teach all the claimed limitations as recited in claim 10. Ozawa in view of Aoki, do not specifically teach of wherein the noise is reduced by said first suppressor by about 8 dB (though it should be noted that Aoki teaches of 3 to 10 dB and 8 is in that range).

In a related with echo suppression, Foulkes teaches of wherein the noise is reduced by said first suppressor by about 8 dB (column 11, lines 2 – 5).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Aoki's noise suppression's technique, Foulkes suppression limits, for the purposes of suppressing noise by a specified level, as taught by Foulkes.

11. Claims 12 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further in view of Dolby (Dolby, US Patent No. 3,665,345).

Art Unit: 2684

Regarding claim 12, Ozawa teaches all the claimed limitations as recited in claim 1.

Ozawa does not specifically teach of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is further reduced by said second suppressor by about 1 to 10 dB.

In a related art dealing with noise reduction, Dolby teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is further reduced by said second suppressor by about 1 to 10 dB (column 2, lines 67 – 70).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression's technique, Dolby's suppression limits, for the purposes of suppressing noise by a specified level, as taught by Dolby.

Regarding claim 13, Ozawa in view of Dolby teach all the claimed limitations as recited in claim 12. Dolby further teaches of wherein the noise is reduced by said second suppressor by about 2 to 8 dB (column 2, lines 67 – 70).

Regarding claim 14, Ozawa in view of Dolby teach all the claimed limitations as recited in claim 12. Dolby further teaches of wherein the noise is reduced by said second suppressor by about 6 dB (column 2, lines 67 – 70).

12. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further in view of Suvanen et al. (Suvanen, US Patent No. 6,081,732).

Regarding claim 16, Ozawa teaches all the claimed limitations as recited in claim 1.

Ozawa does not teach of wherein the noise associated with said given one of said voice

Art Unit: 2684

communications, after suppression by said first noise suppressor, is from an encoding of said noise-suppressed signal.

In a related art dealing with echo noise elimination, Suvanen teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from an encoding of said noise-suppressed signal (column 7, lines 44 –46).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression's technique, Suvanen's encoder noise, for the purposes of reducing all sources of noise generated in the audio path, as taught by Suvanen.

13. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further in view of Ferrer et al. (Ferrer, US Patent No. 6,115,589).

Regarding claim 17, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa does not specifically teach of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from transmission of said noise-suppressed signal.

In a related art dealing with audio noise suppression, Ferrer teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from transmission of said noise-suppressed signal (column 2, lines 27 – 42).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression's technique, Ferrer's channel added noise, for the purposes of reducing all sources of noise generated in the audio path, as taught by Ferrer.

Art Unit: 2684

14. Claims 20 – 23, 30, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) in view of Romesburg (Romesburg, WIPO No. 97/34290).

Regarding claim 20, Ozawa teaches of in a telecommunications system having voice communications subject to noise, suppression means for suppressing said noise for a given one of said voice communications (Figures 1 and 3 and page 7, lines 22 –27), comprising: a first noise suppressor for suppressing noise prior to transmission of the noise-suppressed signal to a destination device (Figure 1 and page 3, lines 36 –43 and page 7, lines 22 –27); and a second noise suppressor for suppressing a received noise-suppressed signal received from a transmitting device having a first noise suppressor therein, whereby the noise associated with said given one of said voice communications is reduced twice (Figure 3 and page 6, lines 33 – 40; and page 7, lines 22 –27).

Ozawa does not specifically teach of a mobile telephone having suppression means or received by said mobile telephone.

In a related art dealing with noise suppression, Romesburg teaches of a mobile telephone having suppression means (Figure 3 and page 11, lines 15 – 23) or received by said mobile telephone (Figures 3 and 4 and page 11, lines 15 – 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

Regarding claim 21, Ozawa in view of Romesburg, teach all the claimed limitations as recited in claim 20. Ozawa further teaches of comprising: an encoder, attached to said first noise

Art Unit: 2684

suppressor, for encoding said noise-suppressed signal from said first noise suppressor prior to transmission to said destination device (Figure 1 and page 3, lines 27 – 31).

Regarding claim 22, Ozawa in view of Romesburg, teach all the claimed limitations as recited in claim 20. Ozawa further teaches of comprising: a decoder, attached to said second noise suppressor, for decoding said received noise-suppressed signal received from said transmitting device prior to said second noise suppressor (Figure 3 and page 6, lines 33 – 40).

Regarding claim 23, Ozawa in view of Romesburg, teach all the claimed limitations as recited in claim 22. Ozawa further teaches of wherein said noise-suppressed signal received from said transmitter prior to said second suppressor is subject to signal distortion caused by low bit-rate speech encoding by said encoder, and wherein said second noise suppressor is tuned to suppress said signal distortion (Figure 3 and page 6, lines 33 – 40).

Regarding claim 30, Ozawa in view of Romesburg, teach all the claimed limitations as recited in claim 20. Romesburg further teaches of wherein the noise associated with said given one of said voice communications is acoustic (Figure 3 and page 11, lines 15 – 23).

Regarding claim 33, Ozawa teaches of in a telecommunications system having voice communications subject to noise, a method for suppressing said noise for a given one of said voice communications (Figures 1 and 3 and page 7, lines 22 – 27), said method comprising the steps of: noise suppressing, by a first noise suppressor, noise received by a first device prior to transmission of the noise-suppressed signal to a destination device (Figure 1 and page 3, lines 36 – 43 and page 7, lines 22 – 27); and further noise suppressing, by a second noise suppressor within said destination device, said noise-suppressed signal received from said first device (Figure 3 and page 6, lines 33 – 40; and page 7, lines 22 – 27).

Ozawa does not specifically teach of acoustic noise.

In a related art dealing with noise suppression, Romesburg teaches of acoustic noise (Figure 3 and page 11, lines 15 – 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

15. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and Romesburg (Romesburg, WIPO No. 97/34290) as applied to claim 20 above, and further in view of Aoki et al. (Aoki, US Patent No. 5,933,506).

Regarding claim 24, Ozawa in view of Romesburg, teach all the claimed limitations as recited in claim 20. Ozawa in view of Romesburg do not specifically teach of wherein the noise associated with said given one of said voice communications is reduced by said first suppressor by about 6 to 14 dB.

In a related art dealing with noise reduction, Aoki teaches of wherein the noise associated with said given one of said voice communications is reduced by said first suppressor by about 6 to 14 dB (starting column 7, line 66 and ending column 8, line 3).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Romesburg's noise suppression's technique, Aoki's suppression limits, for the purposes of reducing added noise at a specified level, as taught by Aoki.

Art Unit: 2684

Regarding claim 25, Ozawa in view of Romesburg and Aoki, teach all the claimed limitations as recited in claim 24. Aoki further teaches of wherein the noise is reduced by said first suppressor by about 8 to 10 dB (starting column 7, line 66 and ending column 8, line 3).

16. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and in view of Romesburg (Romesburg, WIPO No. 97/34290) and Aoki et al. (Aoki, US Patent No. 5,933,506) as applied to claim 25 above, and further in view of Foulkes et al (Foulkes, US Patent No. 3,560,669).

Regarding claim 26, Ozawa in view of Romesburg and Aoki teach all the claimed limitations as recited in claim 25. Ozawa and Romesburg in view of Aoki, do not specifically teach of wherein the noise is reduced by said first suppressor by about 8 dB (though it should be noted that Aoki teaches of 3 to 10 dB and 8 is in that range).

In a related with echo suppression, Foulkes teaches of wherein the noise is reduced by said first suppressor by about 8 dB (column 11, lines 2 – 5).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa, Romesburg, and Aoki's noise suppression's technique, Foulkes suppression limits, for the purposes of suppressing noise by a specified level, as taught by Foulkes.

17. Claims 27 – 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and Romesburg (Romesburg, WIPO No. 97/34290) as applied to claim 20 above, and further in view of Dolby (Dolby, US Patent No. 3,665,345).

Regarding claim 27, Ozawa in view of Romesburg teach all the claimed limitations as

Art Unit: 2684

recited in claim 20. Ozawa and Romesburg do not specifically teach of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is further reduced by said second suppressor by about 1 to 10 dB.

In a related art dealing with noise reduction, Dolby teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is further reduced by said second suppressor by about 1 to 10 dB (column 2, lines 67 – 70).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Romesburg's noise suppression's technique, Dolby's suppression limits, for the purposes of suppressing noise by a specified level, as taught by Dolby.

Regarding claim 28, Ozawa in view of Romesburg and Dolby, teach all the claimed limitations as recited in claim 27. Dolby further teaches of wherein the noise is reduced by said second suppressor by about 2 to 8 dB (column 2, lines 67 – 70).

Regarding claim 29, Ozawa in view of Romesburg and Dolby, teach all the claimed limitations as recited in claim 28. Dolby further teaches of wherein the noise is reduced by said second suppressor by about 6 dB (column 2, lines 67 – 70).

18. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and Romesburg (Romesburg, WIPO No. 97/34290) as applied to claim 20 above, and further in view of Suvanen et al. (Suvanen, US Patent No. 6,081,732).

Regarding claim 31, Ozawa and Romesburg teach all the claimed limitations as recited in claim 20. Ozawa and Romesburg do not teach of wherein the noise associated with said given

Art Unit: 2684

one of said voice communications, after suppression by said first noise suppressor, is from an encoding of said noise-suppressed signal.

In a related art dealing with echo noise elimination, Suvanen teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from an encoding of said noise-suppressed signal (column 7, lines 44 –46).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Romesburg's noise suppression's technique, Suvanen's encoder noise, for the purposes of reducing all sources of noise generated in the audio path, as taught by Suvanen.

19. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and Romesburg (Romesburg, WIPO No. 97/34290) as applied to claim 20 above, and further in view of Ferrer et al. (Ferrer, US Patent No. 6,115,589).

Regarding claim 32, Ozawa and Romesburg teach all the claimed limitations as recited in claim 20. Ozawa does not specifically teach of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from transmission of said noise-suppressed signal.

In a related art dealing with audio noise suppression, Ferrer teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from transmission of said noise-suppressed signal (column 2, lines 27 – 42).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Romesburg's noise suppression's technique, Ferrer's channel added

Art Unit: 2684

noise, for the purposes of reducing all sources of noise generated in the audio path, as taught by Ferrer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanmay S Lele whose telephone number is (703) 305-3462. The examiner can normally be reached on 9 - 6:30 PM Monday – Thursdays and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A. Maung can be reached on (703) 308-7745. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Tanmay S Lele
Examiner
Art Unit 2684

tsl
October 16, 2003

